

ARTELSMAIR ET AL 4 PCT
SERIAL NO.: 10/510,430

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (Canceled)

Claim 2. (Canceled)

Claim 3. (Previously Presented)

A method according to claim 13, wherein the electrode is supplied with constant power during the welding process proper.

Claim 4. (Currently Amended)

A method according to claim 14, wherein the introduction of power during the start program is controlled in a manner that the mean value of the pulsed power corresponds with the amplitude of the set welding current for the subsequent, constant-energy power welding process proper.

Claim 5. (Previously Presented)

A method according to claim 13, wherein the parameters of the start program and, the pulse parameters in the form of pulse

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height, pulse width, pulse frequency, pulse break and, curve shape are freely settable at the power source.

Claim 6. (Previously Presented)

A method according to claim 13, wherein the parameters of the start program by a control device provided in the welding apparatus or in the power source are automatically fixed or varied as a function of the parameters of the welding process proper.

Claim 7. (Previously Presented)

A method according to claim 6, wherein the parameters of the start program are automatically fixed or varied as a function of the amplitude of the welding current used for the welding process proper.

Claim 8. (Previously Presented)

A method according to claim 6 wherein that the parameters of the start program are automatically fixed or varied as a function of the material thickness and material of the workpieces to be welded or further parameters of the welding process proper.

Claim 9. (Previously Presented)

A method according to claim 6, wherein several start programs having different parameters or curve shapes are defined and stored, and that said defined and stored start programs are used by the control device to select the parameters for the start program.

Claim 10. (Previously Presented)

A method according to claim 13, wherein the start program is carried out for a presettable period of time after the ignition of the electric arc.

Claim 11. (Previously Presented)

A method according to claim 10, wherein during said presettable period of time after the ignition of the electric arc the electrode is supplied with constant power.

Claim 12. (Previously Presented)

A method according to claim 11, wherein the electrode, during the presettable period of time after the ignition of the electric arc, is supplied with constant power different from that supplied during the welding process proper.

Claim 13. (Previously Presented) A welding method using a non-consumable electrode comprising the following steps:

igniting an electric arc between an electrode and a set of workpieces to be joined;

supplying an electrode with power from a power source after said ignition of said electric arc between said electrode and said set of workpieces to be joined;

performing a start program after igniting said electric arc but before introducing an additional material;

wherein said electrode is supplied with pulsed energy in a form of current or voltage pulses over a presettable period of time causing a liquid melt bath to vibrate;

performing a welding process after termination of said start program.

Claim 14. (Currently Amended) A tack welding method using a non-consumable electrode comprising the following steps:

igniting an electric arc between an electrode and a set of workpieces to be joined;

supplying an electrode with power from a power source after said ignition of said electric arc between said electrode and said set of workpieces to be joined;

performing a start program after igniting said electric arc but before introducing an additional material;

wherein said electrode is supplied with pulsed energy in a form of current or voltage pulses over a presettable period of time causing a liquid melt bath to vibrate; and

performing a welding process after termination of said start program by supplying the electrode with constant energy power.